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INFORMATION REPORT

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SUBJECT Technical Data on the Soviet Aircraft IL-12
(Modified Version)

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1. The first types of IL-12 aircraft were delivered to the Czechoslovak Airlines on 15 January 1949. These were 32-passenger aircraft, weighing 17,250 kg. They were later returned to the USSR for modifications. After modifications, these planes were brought back to Czechoslovakia, and now were purported to carry only 18 passengers, and their weight was 16,100 kg. According to the source, the IL-12 bears all the marks of development, both its construction and flying performance are not yet finished, and it has been constructed and tested only to 60 percent.

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All the technical data shown below concern the modified type of IL-14, weighing 16.100 kg.

- a. The IL-12 is a twin-engine transport airplane. The engines are type R 9-82, which are the former German injector motors BMW-802. These motors have a maximum power of 1860 HP at a pressure of 1200 mm and 2400 revolutions. Cruising power is 1650 HP at 1850 revolutions and 720 mm pressure or at 2300 revolutions at 630 mm pressure. The engines of the modified IL-12 are the same as before except that they have new, balanced propellers, though these propellers are also of an old type as used on the DC-2. Source can not disclose where these engines are being produced, but says it is a place 200-250 miles east of Moscow.
- b. Speed and climbing performance: at 1000 mm pressure and 2300 revolutions-5000 meters in 14 minutes.
- 1.) Maximum horizontal speed at 50 meters altitude and 1000 mm pressure with 2400 revolutions is 407 km per hour. Cruising speed is 285 to 295 km per hour.
 - 2.) Performance of the IL-12 rapidly decreases in strong headwinds, whereas the performance of the C-47 (Dakota) was substantially higher under the same weather conditions.
 - 3.) Cruising speed on one engine at a total weight of 16,100 kg. at 900 mm pressure and 2150 to 2250 revolutions is 210 km per hour.
 - 4.) Maneuverability on one engine is excellent. Climbing on one engine at a pressure of 1000 mm and 2400 revolutions is 0.25 meters at a speed of 160 to 165 km per hour.

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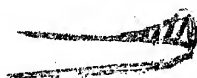
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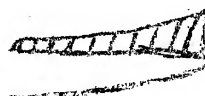
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- 5.) The critical engine in these aircraft is the left side motor, as it has inferior rotary elements.
- c. Loss of speed: data below applies to an overall weight of 16,100 kg.
- 1.) Retracted undercarriage and flaps: 148 to 153 km per hour at 2000 meters altitude:
 - 2.) Extended undercarriage and flaps extended to 50 percent: 130 to 153 km per hour:
 - 3.) Extended undercarriage only without flaps: 140 km per hour:
 - 4.) Breaking flaps were used on the IL-12 in two manners: for landing on normal airfields flaps are extended to only 50 percent: for landing on small airfields flaps are extended completely giving a landing speed of 160 km per hour.
- d. Take-off distance: 1400 meters under normal conditions.
- e. Range: 2,200 km
- f. Ceiling: under normal conditions to 6,000 meters with one compressor; to 9400 to 9600 meters using the second compressor. At an altitude of 4200 meters the second compressor can also be used on one motor.
- g. Fuel: The IL-12 has six fuel tanks, four in the fuselage and two in the wings, with a capacity of 3,200 liters. Fuel consumption is 560 to 600 liters per hour. For the first flying hour, including the take-off, it is 700 to 750 liters per hour. Source states that it is extremely difficult to tune the engines to a correct fuel consumption.
- h. Undercarriage: The aircraft tail-spur was replaced by a tricycle undercarriage. The small front wheel is guided by a shock absorber with a lateral deflection of 30 degrees to the right and left.
- i. Flying characteristics:
- 1.) Lateral stability: very labile. At 160 km per hour flaps are negative. Lateral stability is markedly bad to negative.
 - 2.) Conduction of the plane: absolutely none. The reason for this probably lies in the small surface of the tail-fin. The latter models have been equipped with "fish-tails", i.e., a prolonged tail-fin, similar to those in the B-29(TU-4) type. See below:



OLD TYPE



NEW TYPE

After reconstruction of tail-fins lateral deviations are as high as 15 percent to the right and left. The aircraft does not rectify itself. Source had no opportunity to test the aircraft in unfavorable weather conditions, like storms, etc.

- 3.) Longitudinal stability: with an overall weight of 16,100 kg. longitudinal stability is only 60 percent good.
- j. De-icing system: It functions independently from the engines at a temperature of about 300 C and 60 degrees C at the wing tips. In case of failure of one engine, the de-icing system on one half of the aircraft is put out of order. Propellers are de-iced by alcohol: pure alcohol with wood-spirit and 3% glycol. The tank holds about five liters and is insufficient.

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k. VHF and SBA equipment: These aircraft have been equipped with British VHF/4-button type and SBA, which were delivered to Czechoslovakia between April and August 1950. Some 20 sets were delivered. Should the Czechoslovak Airlines fail to receive this material from abroad, the IL-12 could not be used for long distance flights, because other material, mainly of Soviet and German origin, was unsatisfactory.

3. The Soviets do not use the IL-12 during the winter. They stop flying it in about August and start again in April. The reasons for this are not known by the source. Notwithstanding this, the Soviets are recommending the Czechoslovak Airlines to use this plane in winter as well. According to the source and to other pilots, the flying qualities of this aircraft are most unfavorable, flying by instrument is very unpleasant, and the electrical artificial horizons are absolutely unreliable. The Czechoslovak Airlines are replacing them by subpressure (sic, pressure?) artificial horizons. All instruments are in the millimeter gauge. Borad compasses and altimeters are Soviet produced copies of Bendix.
4. The Russians provided no servicing instructions with the aircraft for the IL-12 and the Czechoslovak Airlines had to develop their own instructions. The engines are said to be good for 300 hours and this was increased by the Czechoslovak Airlines to 400 hours, after which the engines must be sent for general overhauling. No engine servicing or airplane repair on the IL-12 is done in Czechoslovakia. Engine overhauls are always done in Moscow, where the aircraft has to be flown with its motors. They must first be flown to Warsaw where they are taken over by Soviet aircrews and flown to the U.S.S.R. Occasionally, a Czechoslovak pilot is allowed to fly them, but the co-pilot, R/T-operator, and navigator must be Soviets. After overhauling they are mounted back into the aircraft and flown to Prague.
5. The aircraft that have been delivered to Czechoslovakia had been used by the USSR in the USSR and were fairly old, having been manufactured around 1945.
6. [REDACTED] The IL-12 is still being permanently produced in large series both for civilian and army use. The Army version of the IL-12 has an overall weight of 20,000 kg. 743
7. Source stated that the IL-12's are being produced at a place which is one hour and twenty minutes' flying time east of Moscow, using this type plane. 742

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